Supplementary Information

Developing an aqueous approach for synthesizing Au and M@Au (M = Pd, CuPt) hybrid nanostars with plasmonic properties†

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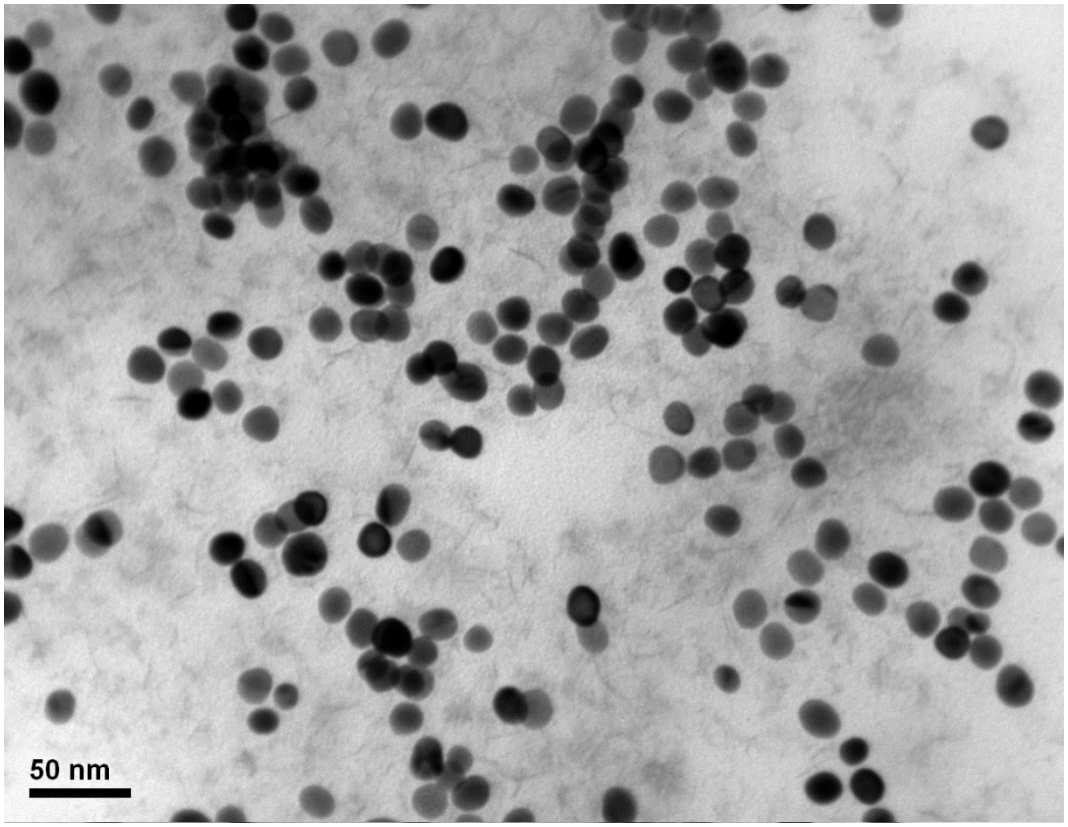

Figure S1. TEM image of the Au nanospheres of 19 nm in size which was obtained by a two-step reduction procedure.

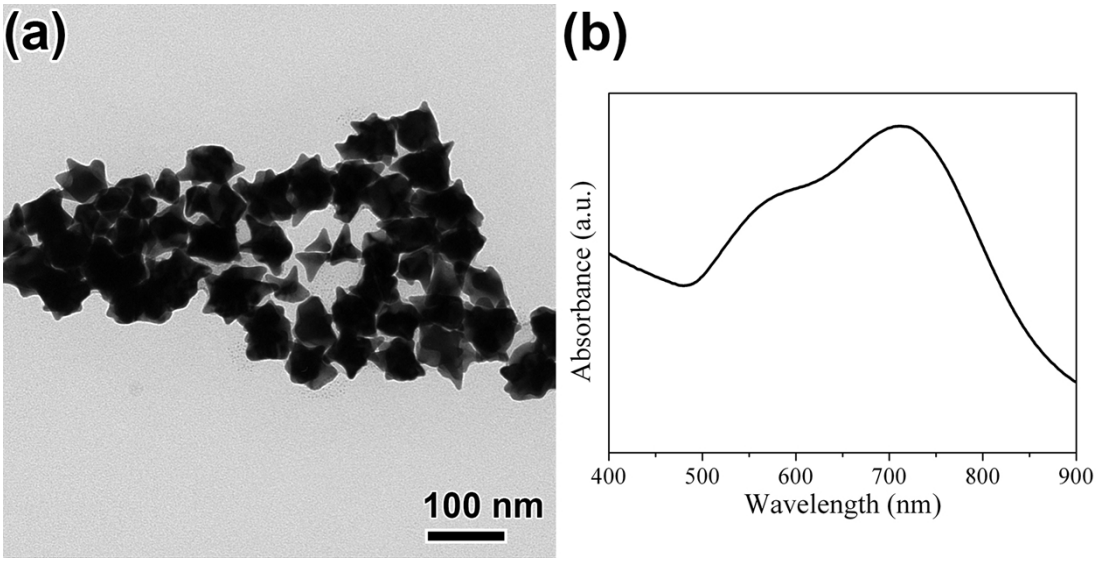

Figure S2. (a) TEM image of the sample that synthesized with ethanolamine in the absence of the seeds and (b) the corresponding UV-*vis* spectrum.

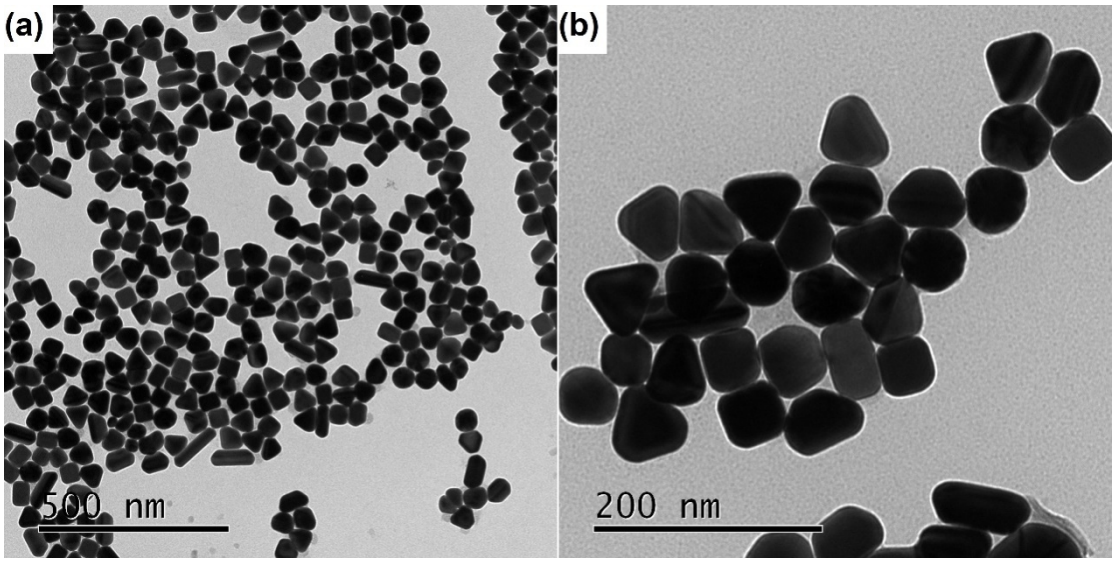

Figure S3. TEM images of Au NPs that obtained using the standard procedure except that AA instead of ethanolamine was used as the reducing agent.

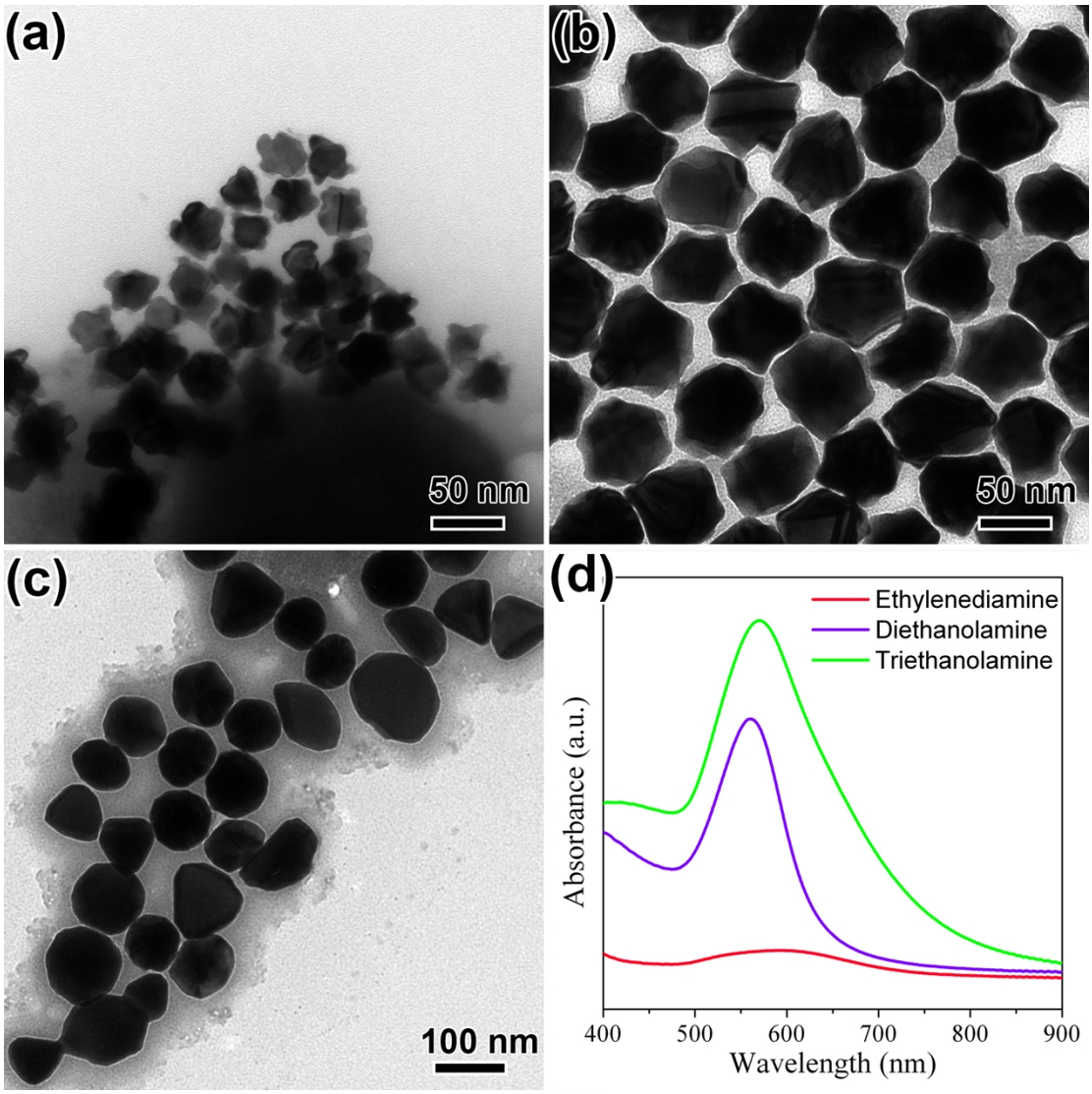

Figure S4. (a-c) TEM images of the samples that synthesized with different amines in place of ethanolamine: (a) ethylenediamine, (b) diethanolamine, and (c) triethanolamine. (d) The corresponding UV-*vis* spectra.

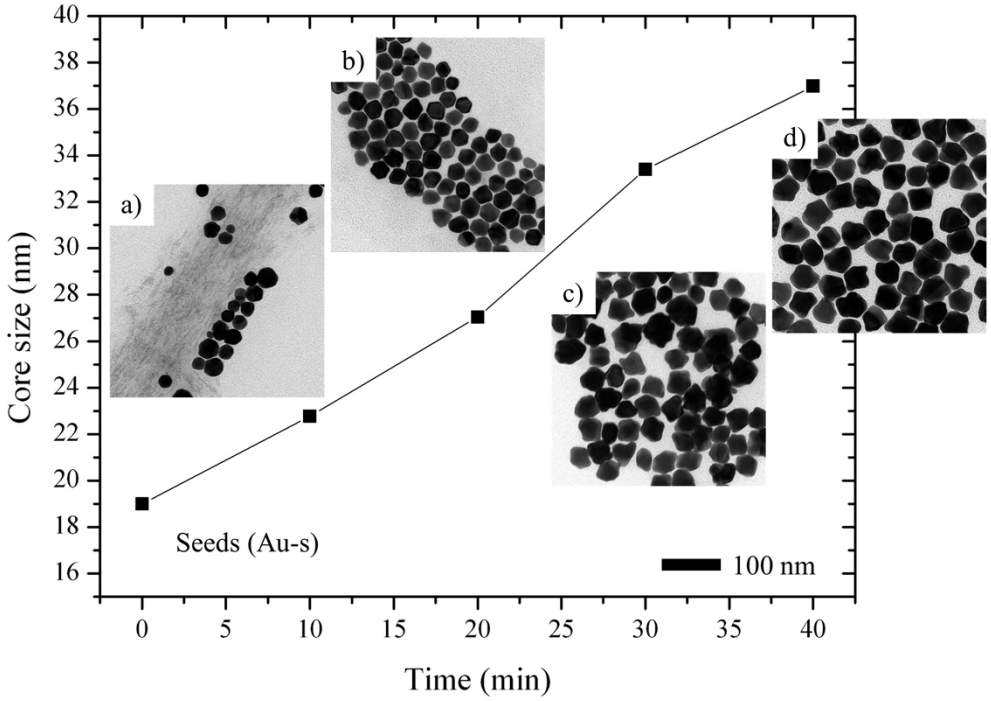

Figure S5. The average core size evolution with reaction time in the initial stages of Au nanostar synthesis. Insets show TEM images at (a) 10, (b) 20, (c) 30, and (d) 40 minutes, which share a scale bar of 100 nm.

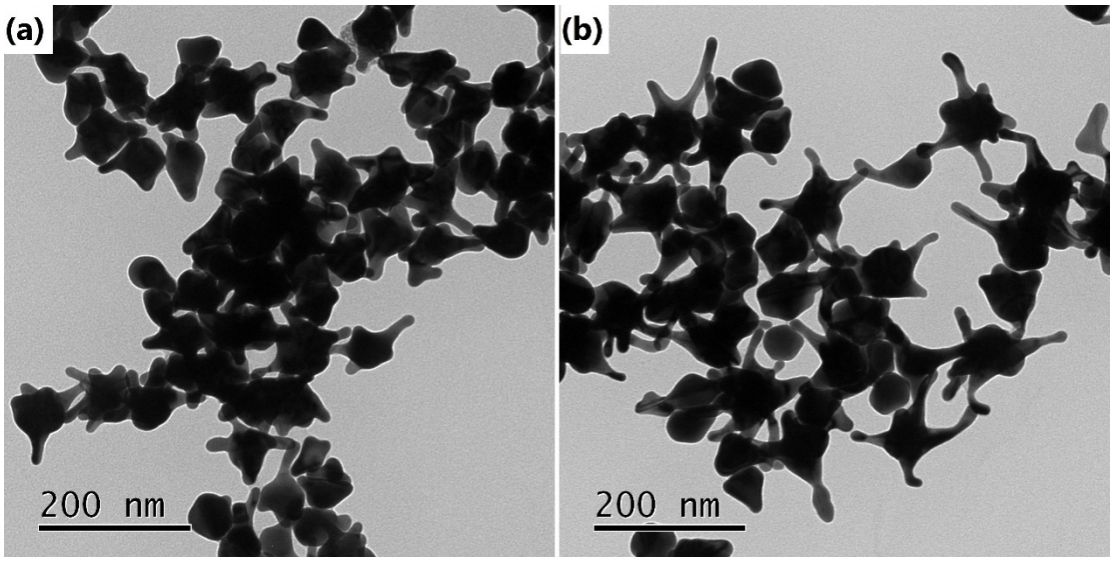

Figure S6. TEM images of Au nanostars aged at 0 °C for (a) 2 months and (b) 3 months.

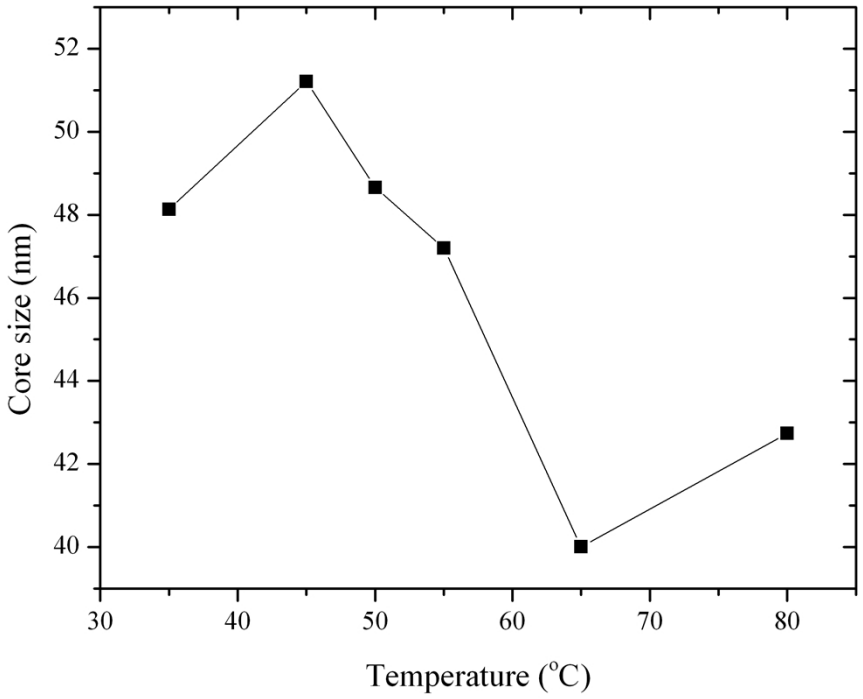

Figure S7. Average core size of Au NPs as a function of the reaction temperature.

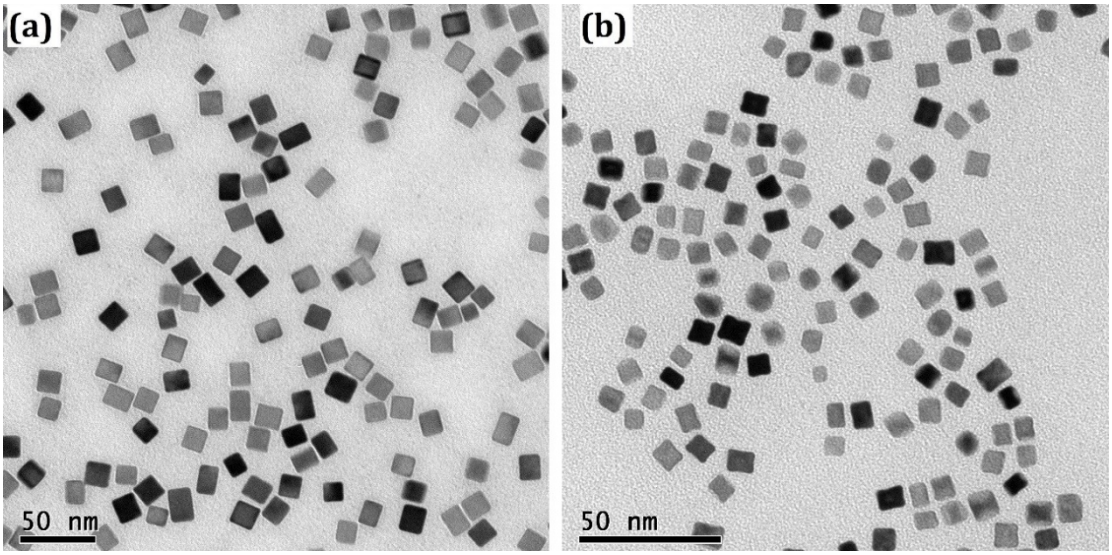

Figure S8. TEM images of (a) 14-nm Pd nanocubes and (b) 7-nm CuPt bimetallic nanocubes serving as the seeds.

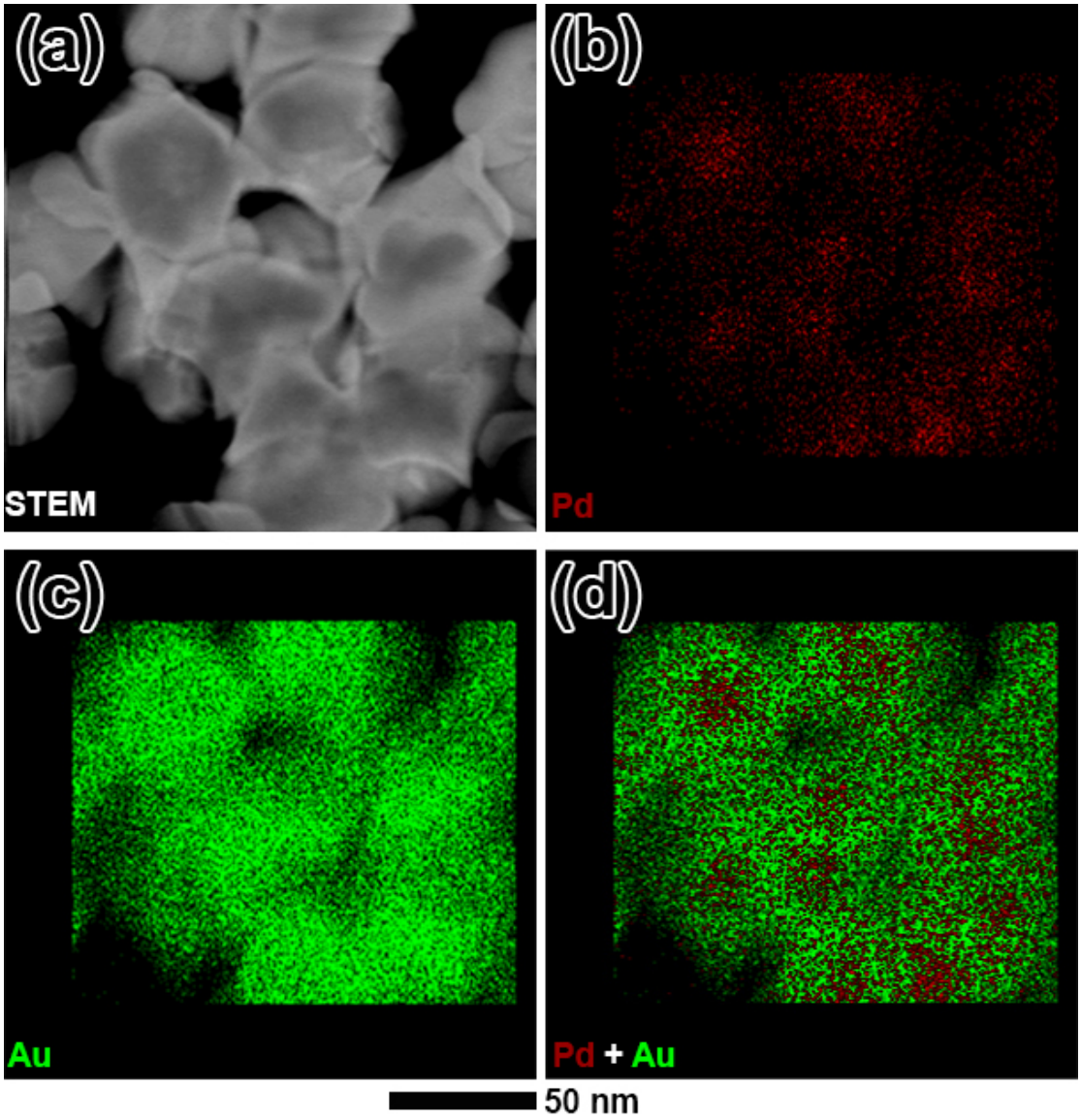

Figure S9. (a) STEM image of Pd@Au nanostars. (b) Pd, (c) Au and (d) Pd + Au overlapped EDX mapping images.